STATE WATER RESOURCES CONTROL BOARD
BOARD MEETING SESSION – CENTRAL VALLEY REGIONAL WATER BOARD
JULY 10, 2018

ITEM 3

SUBJECT

CONSIDERATION OF A PROPOSED RESOLUTION APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SACRAMENTO AND SAN JOAQUIN RIVER BASINS FOR THE CONTROL OF PYRETHROID PESTICIDE DISCHARGES.

DISCUSSION

On June 8, 2017, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopted Resolution R5-2017-0057 amending the Basin Plan to establish a control program, including Total Maximum Daily Loads (TMDLs), for discharges of pyrethroid pesticides (Basin Plan amendment). The control program is applicable to discharges of pyrethroids to water bodies in the Sacramento and San Joaquin River Basins with WARM and/or COLD aquatic life beneficial uses. The control program addresses water bodies that are listed as impaired by pyrethroid pesticides on the Clean Water Act Section 303(d) list as well as potential future impairments. The amendment includes TMDLs for nine urban water bodies already listed as impaired, "category 4b" demonstrations for five listed water bodies receiving agricultural discharges (i.e. demonstrations that the Board's existing regulatory programs adequately address impairments in agricultural water bodies), and a conditional prohibition of discharges that would apply basin-wide.

Impairments

Pyrethroids are commonly used pesticides and have been found at toxic concentrations in water and sediment in both urban and agricultural areas within the Central Valley region. The main sources of pyrethroids to surface waters are urban runoff and agricultural runoff. Wastewater treatment plant effluents are known to contain pyrethroids, but typically at levels much lower than found in urban or agricultural runoff. There are currently fourteen water bodies that are impaired (listed on the 303(d) list of waters not meeting water quality standards) due to pyrethroid pesticide concentrations in sediment and/or water. Wastewater treatment plants do not discharge to any of the water bodies currently listed as impaired by pyrethroids.

Pyrethroid pesticides are toxic to aquatic organisms at very low concentrations. In some cases, the level at which they are toxic is below current analytical detection limits. There is considerable uncertainty in the characterization of the extent of the pyrethroid problem, the potential reductions needed, and the effectiveness of management practices and technology to control pyrethroid discharges. The available data indicate that significant reductions would be needed to attain levels protective of aquatic life and consistent with attainment of water quality standards. The feasibility of achieving these reductions, especially in urban environments, is uncertain because of legal limitations on storm water and municipal wastewater dischargers' ability to control the use of pesticides by individuals in their service areas. In these areas, the approach most likely to succeed in attaining adequate pyrethroid reductions would include a combination of dischargers implementing reasonable best management practices and the Board

and dischargers coordinating with DPR and U.S. EPA's Office of Pesticide Programs to address pesticide uses/products with high potential to impact surface water.

Control Program

Because of the uncertainty noted above, the proposed amendment would establish a pyrethroids control program that proceeds in phases. During the first phase (fifteen years), the Board would gather data, require the implementation of best management practices to reduce pyrethroid concentrations, and emphasize coordination with pesticide regulators. Based on data gathered during that interim period, the Board may consider additional Basin Plan amendments such as revisions to the pyrethroid control program requirements and TMDLs, additional TMDLs, and/or pyrethroids-specific water quality objectives.

To ensure that water quality improvements begin while additional information is being developed, the proposed amendment includes TMDLs for nine urban water bodies already listed as impaired, implementation requirements to support "category 4b" demonstrations for five water bodies receiving agricultural discharges (i.e. demonstrations that the Board's existing regulatory programs adequately address impairments in agricultural water bodies), and a conditional prohibition of discharges that exceed identified triggers (discussed below). The proposed amendment would be implemented through existing Central Valley Water Board regulatory programs. Under the conditional prohibition, discharges of pyrethroids at concentrations that exceed numeric pyrethroid triggers are prohibited unless a discharger is implementing a management plan to reduce pyrethroid levels in their discharges. Because the prohibition covers discharges to all the waterbodies in the Sacramento and San Joaquin River Basis with aquatic life beneficial uses, its implementation should help prevent or quickly address future pyrethroid impairments in water bodies in these basins that are not currently on the 303(d) list. The elements of the control program related to municipal stormwater discharges were designed to be compatible with the Urban Pesticide Amendments being developed by the State Board.

Actions by the Central Valley Water Board and Recommendations for Other Agencies

The amendment contains actions for the Central Valley Water Board, including working with stakeholders to develop of a Pyrethroid Research Plan that will describe research and studies to inform future iterations of this control program within two years, a staff update to the Board at least every three years, and consideration of adoption of pyrethroid water quality objectives within fifteen years.

The Central Valley Water Board recognizes that implementation of the authorities of agencies that regulate pesticide use, including the California Department of Pesticide Regulation (CDPR) and United States Environmental Protection Agency (U.S. EPA) Office of Pesticide Programs, should be one of the primary mechanisms for addressing pesticide-caused water quality impairments. Therefore this amendment contains actions for the Central Valley Water Board related to coordinating with these agencies, and the amendment contains a number of recommendations for actions that CDPR and U.S. EPA should take to help resolve pesticide water quality impacts.

Concentration Goals

At this time the Central Valley Water Board does not have enough information to complete the analysis required in the water code for the adoption of pyrethroid water quality objectives. More

information is needed, especially on effectiveness of management practices in order to assess attainability of concentration goals and the costs of implementation that would be required to attain water quality objectives. Concentration goals are proposed to be established as numeric targets and allocations for TMDLs, and as triggers for the requirement of management practices in a conditional prohibition to move toward improved water quality while needed information is developed.

The proposed concentration goals are based on water quality criteria derived via the University of California Davis method, which utilizes laboratory toxicity data to develop a species sensitivity distribution. The proposed concentration goals are based on the lower 5th percentile of the species sensitivity distributions, which is consistent with U.S. EPA guidance. Because pyrethroids have additive toxic effects, the concentration goals proposed for prohibition triggers and TMDL numeric targets are based on an additive formula. In addition, pyrethroids tend to bind to sediments and organic matter rather than remain dissolved in the water column. When they are bound, their toxicity to aquatic organisms is reduced because they are less bioavailable. The proposed concentration goals are expressed as "freely dissolved" concentrations and include a formula to calculate the freely dissolved concentrations to account for bioavailability.

A number of alternatives were considered and concentration goals based on the 5th percentile criteria are recommended, recognizing and considering the need to provide reasonable beneficial use protection, the significant water quality improvements that will be needed to attain these criteria, uncertainty about potential costs and attainability, potential impacts of alternative pesticides, and the proposed phased regulatory approach which allows the concentration goals to be adjusted if needed. Independent scientific peer review supported the use of the 5th percentile, additive toxicity and use of "freely dissolved" concentrations.

Monitoring and Surveillance

The amendment contains monitoring requirements for municipal storm water, domestic wastewater, and agricultural dischargers, allows for representative monitoring, and contains provisions that address potential replacement pesticides. Specific monitoring locations and timing are not prescribed, however monitoring is will be required for pyrethroid chemistry, and water column and sediment toxicity to *Hyalella azteca*. Further monitoring and reporting programs must be designed to collect information necessary to make a number of specific determinations, including if concentration goals are being attained and the effectiveness of management practices implementation, and if discharges are causing or contributing to toxicity impairments due to multiple pollutants. The amendment explicitly allows for collaborative monitoring efforts and representative monitoring programs and allows data collected by other entities to be used by the dischargers in their monitoring and reporting.

Development of the Amendment

The amendment has been in development since 2012. During that time, Central Valley Water Board staff has held nine stakeholder meetings at which regulatory approaches, technical issues and preliminary draft Basin Plan amendment language were discussed. The Central Valley Water Board also held three Board workshops on the development of the amendment, and a hearing to receive public comments, prior to their adoption of the Amendment.

POLICY ISSUE

Should the State Water Board approve the amendment to the Basin Plan to establish a control program for the control of pyrethroid pesticide discharges in the Sacramento and San Joaquin River Basins?

FISCAL IMPACT

Central Valley Water Board and State Water Board staff work associated with or resulting from this action will be addressed with existing and future budgeted resources.

REGIONAL BOARD IMPACT

Yes, approval of this resolution will amend the Central Valley Water Board's Basin Plan.

STAFF RECOMMENDATION

That the State Water Board:

1. Approves the resolution to amend the Central Valley Water Board's Basin Plan for the Sacramento and San Joaquin River Basins.

2. Authorizes the Executive Director or designee to submit the amendment adopted under Central Valley Water Board Resolution No. R5-2017-0057 and the administrative record for this action to the Office of Administrative Law as approved.

3. Authorizes the Executive Director or designee to submit the TMDLs adopted under Central Valley Water Board Resolution No. R5-2017-0057 to the U.S. Environmental Protection Agency for approval.

State Water Board action on this item will assist the Water Boards in reaching Goal 1 of the Strategic Plan Update: 2008-2012 to fully support the beneficial uses for all 2006-listed water bodies by 2030. In particular, approval of this item will assist in fulfilling Objective 1.1, to implement a statewide strategy to efficiently prepare, adopt, and implement TMDLs, which result in water bodies meeting water quality standards, and adopt and begin implementation of TMDLs for all 2006-listed water bodies by 2019. Additionally, the approval of this item will assist in fulfilling Objective 1.1, Action 1.1.5 to identify document and begin implementation of strategies with broad application that can be applied through policies and permits to restore water quality, and that may eliminate the need to develop a TMDL.